REMARKS

By the present amendment claims 1, 3, 5-8, 11 and 17 have been amended to clarify the invention. Claims 2, 4, 9, 10, 12-16 and 18-19 have been cancelled. Claim 20 has been newly added.

Claims 1, 3, 5-8, 11, 17 and 20 are thus pending in the application.

In the Office Action, the Examiner rejected claims 1-8, 11, 13 and 17 under 35 U.S.C. §112, second paragraph.

Claims 1-8, 11, 13 and 17 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent Number 6,396,505 to Lui et al.

In view of the arguments that follow, Applicants respectfully traverse the Examiner's rejection of claims 1, 3, 5-8, 11 and 17.

Rejections Under 35 U.S.C. §112, second paragraph

The Examiner rejected claims 1-8, 11, 13, and 17 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter set forth therein.

Regarding claim 1, the Examiner asserted that it was not clear which bits were "each of bits." Applicants respectfully submit that claim 1 has been amended to clarify the bits as bits included in the binary bit map data.

Also regarding claim 1, the Examiner asserted that it was not clear what is meant by "bits located in the vicinity of the bit." Applicants direct the Examiner's attention to the

specification on page 46, line 18 to page 47, line 10 which discloses that the correction pattern indicates that the color element levels of sub-pixels in the vicinity of a sub-pixel corresponding to the basic portion of the graphic are set to "5", "2", and "1" in this order from the sub-pixel closest to the basic portion of the graphic to the farthest one from the basic portion of the graphic. Therefore, as seen in Figure 18, the basic portion is the core of the graphic composed of bits that are assigned to one group of a plurality of groups, which is represented by the graphic letter "A." In Figure 18, the correction patterns are also bits that are set to 5", "2", and "1." The correction patterns are in the surrounding area (vicinity) of the bits assigned to the one group (graphic letter A) of the plurality of groups.

Applicants respectfully submit that the materials disclosed on page 46, line 18 to page 47, line 10 are sufficiently defined to overcome the rejection under 35 U.S.C. §112, second paragraph.

Regarding claim 1, the Examiner asserted that it is not clear what "a basic portion" is and how a portion of any graphics can make up a basic portion. Applicants respectfully submit that "a basic portion" refers to a portion corresponding to a core of a graphic as illustrated in Figure 18 and disclosed on page 36, lines 8-9.

Applicants respectfully submit that the disclosure on page 36, lines 8-9 and illustrated in Figure 18 defines "a basic portion" and overcomes the rejection under 35 U.S.C. §112, second paragraph.

Regarding claim 1, the Examiner asserted that it was not clear how bits assume the property of continuity. Applicants respectfully submit that "continuity" is not recited in claim 1. However, with respect to claim 3, the specification on page 68, lines 15-22 discloses

that the continuity of binary "1" bits is illustrated in Fig. 23A by the inclination angle of a line in which the continuity of "1" bits is detected.

Applicants respectfully submit that the disclosure on page 68, lines 15-22 defines "continuity" and overcomes the rejection under 35 U.S.C. §112, second paragraph.

Regarding claim 4, the Examiner asserted that it was not clear as to what is meant by "one color element." Applicants respectfully submit that "one color element" is no longer recited in claim 4, since claim 4 has been cancelled. However, with respect to claim 1, the specification on page 32, lines 15-20 discloses that sub-pixels are pre-assigned to a color element so as to output that color. For example, sub-pixel 14R is pre-assigned to color element R so as to output color R (red) and a different sub-pixel is pre-assigned to each of the color element G and B so as to output color G (green) and B (blue), respectively.

Applicants respectfully submit that the disclosure on page 32, lines 15-20 defines "one color element" and overcomes the rejection under 35 U.S.C. §112, second paragraph.

Regarding claim 4, the Examiner asserted that it was not clear as to what is meant by "stepwise through." Applicants respectfully submit that "stepwise through" is no longer recited in claim 4, since claim 4 has been cancelled. However, with respect to claim 1, the specification on page 116, lines 16-22 discloses that the intensity of each of the plurality of color elements are represented in a stepwise fashion in which the color elements gradually increases/decreases from sub-pixel to sub-pixel.

Applicants respectfully submit that the disclosure on page 116, lines 16-22, defining "stepwise through" overcomes the rejection under 35 U.S.C. §112, second paragraph.

Regarding claim 1, the Examiner asserted that "the bit map data" has insufficient antecedent basis. Applicants respectfully submit that claim 1 has been amended to overcome the rejection under 35 U.S.C. §112, second paragraph.

Regarding claim 1, the Examiner asserted that "to the one" has insufficient antecedent basis. Applicants respectfully submit that claim 1 has been amended to overcome the rejection under 35 U.S.C. §112, second paragraph.

The Examiner asserted that claims 11, 13 and 17 have similar rejections. Applicants also respectfully submit that claims 11, 13 and 17 have also been amended to overcome the rejection under 35 U.S.C. §112, second paragraph.

Rejection Under 35 U.S.C. § 102

The Examiner rejected claims 1, 3, 5-8, 11 and 17 under 35 U.S.C. §102(e) as being anticipated by Lui et al. The rejection is respectfully traversed.

Applicants' amended claim 1 recites a graphic display apparatus for displaying a graphic which is represented by binary bit map data comprising: a display device including a plurality of sub-pixels; and a control section for controlling the display device, wherein the plurality of sub-pixels form a plurality of groups, each of the plurality of groups includes a predetermined plural number of sub-pixels, at least one color element is pre-assigned to each of the plurality of sub-pixels, and the intensity of each of the at least one color element is represented in a stepwise fashion through a plurality of color element levels, the control section assigns bits included in the binary bit map data to one group of the plurality of groups, the control section defines at least one sub-pixel

included in the one group of the plurality of groups as a basic portion of the graphic to be displayed on the display device based on the information about the bits located in a vicinity of the bits assigned to the one group of the plurality of groups, and the control section sets a color element level of at least one sub-pixel corresponding to the basic portion of the graphic to a predetermined color element level, and sets a color element level of at least one sub-pixel adjacent to at least one sub-pixel corresponding to the basic portion of the graphic to a color element level different from the predetermined color element level.

The Examiner alleged that Lui et al. teaches the recitations of claim 1. Specifically, the Examiner alleged that Lui et al. inherently teaches that the control section assigns each of bits included in the bit map data to one of the plurality of groups by referencing Fig. 6, grid 620 and bit map image 630; and displays the graphic by controlling sub-pixels included in the one of the plurality of groups based on information about bits located in the vicinity of the bit assigned to the one of the plurality of groups by referencing Figs. 7a-7b, the abstract, claim 19, and col. 15, lines 8-20.

Applicants respectfully submit that Lui et al. do not disclose a graphic display apparatus comprising a control section that "assigns bits included in the binary bit map data to one group of the plurality of groups," as recited in amended claim 1.

Lui et al. disclose a display method and device for detecting and reducing color errors in an image. The display device includes an image pixel of text represented by a grid used to generate red, green and blue intensity values by a red, green, and blue pixel sub-components (RGB pixel sub-components). Lui et al. further disclose receiving

bitmap images from a graphics display interface and generating video signals that are supplied to the display adapter for optical presentation by the display. A control apparatus controls the display of the text by controlling pixel sub-components used as a luminous intensity source of Lui et al. The control apparatus controlling pixel sub-components of Lui et al. is not analogous to a control section that "assigns bits" included in a "binary bit map data" of the present invention.

Applicants' binary bit map data is based on a binary value, which represents a graphic (see for example Figures 39A and 39B). A text character is displayed on a bit map with two binary values corresponding to black and white on a pixel by pixel basis. Each bit has a value of "0" and "1". However, the grid of Lui et al. represents an image with luminous intensity values for pixel sub-components of a pixel. Each pixel sub-component generates red, green and blue intensity values that correspond to a bitmap image with a potential luminous intensity ranging from 0 to 255. The light from each pixel sub-component group together creates an effect of a single color whose hue, saturation, and intensity depends on the luminous intensity value of each of the three pixel sub-components. For example, if each pixel-subcomponent has a luminous intensity of 255, the pixel will be perceived as being white. The pixel sub-components that generate red, green, and blue intensity values of Lui et al. that correspond to an image is not analogous to assigning bits "included in the binary bit map data to one group of the plurality of groups." Moreover, the bit map data of Lui et al. does not correspond to two binary values corresponding to black and white on a pixel by pixel basis. However, the bit map data of Lui et al. merely corresponds to RGB pixel sub-

components. Accordingly, the invention of Lui et al. does not disclose a control section that "assigns bits included in the binary bit map data to one group of the plurality of groups."

Additionally, the Examiner's inherency conclusion that Lui et al. teaches the control section assigns each of bits included in the bit map data to one of the plurality of groups is based on what Lui et al. would have included if the bits were in a binary bit map data, and not the bitmap image being present in the reference. Applicants respectfully submit that the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *See* M.P.E.P. § 2112.

Applicants also respectfully submit that Lui et al. do not disclose a graphic display apparatus comprising a control section that "defines at least one sub-pixel included in the one group of the plurality of groups as a basic portion of the graphic to be displayed on the display device based on the information about the bits located in a vicinity of the bits assigned to the one group of the plurality of groups," as recited in amended claim 1.

Lui et al. discloses a bit map image that corresponds to RGB pixel sub-components. The bit map image is defined by the light from each pixel-subcomponent group to create a single color, which depends on the luminous intensity value of each of the pixel-subcomponents. White is used to indicate pixel sub-components that are turned on, and pixel sub-components that are not white are turned off. Also, for black text that is turned on, the intensity value associated with the pixel sub-component is

controlled so that the pixel sub-component does not output light. If there were a white background, pixel sub-components would be assigned an intensity value that would cause them to output their full light. The pixel-subcomponents of Lui et al. merely are assigned a value that would produce the specified color if all three pixel sub-components are used to generate the foreground color. The valued assigned to the pixel subcomponents to produce color of Lui et al. is not analogous to defining one sub-pixel in a group of sub-pixels as the basic portion "based on the information about the bits located in a vicinity of the bits assigned to the one group of the plurality of groups." The bit map image of Lui et al. is not defined based on the information of the other pixels sub-components aligned along the boundaries. However, pixel sub-components that should be turned on are determined by whether the center of a scaled image segment is within the scaled representation of the image to be displayed (see col. 15, lines 20-62). Accordingly, the invention of Lui et al. does not disclose a control section that "defines at least one sub-pixel included in the one group of the plurality of groups as a basic portion of the graphic to be displayed on the display device based on the information about the bits located in a vicinity of the bits assigned to the one group of the plurality of groups."

Applicants further submit that Lui et al. do not disclose a graphic display apparatus comprising a control section that "sets a color element level of at least one sub-pixel corresponding to the basic portion of the graphic to a predetermined color element level, and sets a color element level of at least one sub-pixel adjacent to at least one sub-pixel corresponding to the basic portion of the graphic to a color element

level different from the predetermined color element level," as recited in amended claim 1.

Lui et al. disclose a scaled conversion operation in which a scaled image (1004 in Figure 11) is used to control a luminous intensity value associated with each pixel sub-component by controlling the same size portion of the scaled image. Separate image samples of the scaled image are used to generate red, green, and blue intensity values associated with corresponding portions of the bitmap image generated. The scaled image is white and indicates pixel sub-components that are turned on in the bitmap image. Again, the technique for determining if a pixel sub-component should be turned on or off during scaling is determined if the center of the scaled image segment, represented by a portion of the scaling grid, being mapped into the pixel sub-component is within the scaled representation of the image to be displayed.

Each pixel sub-component of the bitmap image columns is determined from a different segment of the corresponding columns of a scaled hinted image. Red, green and/or blue (RGB) pixel sub-components are boundaries to of the bitmap image. The RCB pixel sub-components of a pixel are treated as independent luminous intensity component into which a separate portion of the scaled image can be mapped. Humans perceive light intensity at different light sources at different rates. Therefore, green contributes approximately 60%, red approximate 30%, and blue approximately 10% to perceive luminance of a white pixel which results from having red, green, and blue pixel sub-components set to their maximum luminous intensity output.

However, in the present invention, the control section sets the basic portion of a graphic sub-pixel to a predetermined color element level. The control section also sets a different color element level from the predetermined color element level to the sub-pixels adjacent to the basic portion. The color element level of the sub-pixels illustrates a level of brightness for the R, G and B sub-pixels arranged adjacent to the basic portion. For example, in Figure 4, a horizontal line is the basic portion of the graphic. A numeric value denotes the color element level of each sub-pixel. The basic portion (horizontal line) is at level 3, the adjacent sub-pixel to the basic portion is at a color element level 2, and the next adjacent sub-pixel is at a color element level 1. Also, for example, in Figure 19, the basic portion (hatch sub-pixels of Figure 18) is set at a color element level 7. A sub-pixel adjacent to the sub-pixel corresponding to the basic portion is set to color element level 5. Vicinal sub-pixels of the sub-pixel adjacent to the basic portion or set to color element level 2 or 1. The color element levels are determined based on selected correction patterns.

The pixel sub-components of Lui et al. are not analogous to sub-pixels adjacent to the basic portion of the present invention. The luminous intensity values associated with each pixel sub-component of Lui et al. controls each pixel component by the same size of a scaled image. However, the red, green and blue boundary pixel sub-components of the scaled image that are set at 60%, 30% and 10% respectively, are not set at a color element level that is determined based on selected correction patterns. Moreover, the scaled image of Lui et al. results in a bitmap image in which pixel sub-components of the bitmap image are turned on or off. In the present

invention, the sub-pixel of the basic portion is set to a color element level. Vicinal sub-pixels adjacent to the basic portion are set at a different color element level (in a stepwise fashion) based on selection correction patterns and are not turned on or off based on the scaled image.

In view of the reasons given above, Applicants respectfully submit that Lui et al. do not disclose the invention of claim 1 and the rejection of claim 1 should be withdrawn. The rejection of dependent claims 3, and 5-8 should be withdrawn for at least the same reasons given above with regard to independent claim 1.

Applicants also respectfully submit that claim 11, which discloses "assigning bits included in the binary bit map data to one of the plurality of groups" and "setting a color element level of at least one sub-pixel corresponding to the basic portion of the graphic to a predetermined color element level, and setting a color element level of at least one sub-pixel adjacent to at least one sub-pixel corresponding to the basic portion of the graphic to a color element level different from the predetermined color element level," is distinguishable over the prior art for at least the same reasons given above with regard to independent claim 1. Therefore, the rejection of claim 11 should be withdrawn.

Applicants also respectfully submit that claim 17, which discloses "assigning bits included in a binary bit map data to one group of the plurality of groups" and setting a color element level of at least one sub-pixel corresponding to the basic portion of the graphic to a predetermined color element level, and setting a color element level of at least one sub-pixel adjacent to at least one sub-pixel corresponding to the basic portion of the graphic to a color element level different from the predetermined color element

level" is distinguishable over the prior art for at least the same reasons given above with regards to claim 1. Therefore, the rejection of claim 17 should be withdrawn.

Conclusion

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a three (3) month extension of time for filing a reply in connection with the present application, and the required fee of $980.00 is attached hereto.

All rejections raised in the Office Action having been addressed, it is respectfully submitted that the present application is in condition for allowance and such allowance is respectfully solicited. Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Demetra R. Smith-Stewart (Reg. No. 47,354), to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for

any additional fees required under 37 C.F.R. §§ 1.16 or 1. 17; particularly, extension of time fees.

Respectfully submitted,

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